

WHAT IS CLAIMED IS:

1. A sync frame structure for use with an information storage medium having an area being divided by sectors, wherein

5 at least one of said sectors includes one or more sync frames, and

 at least one of said sync frames includes a plurality of sync codes.

2. The structure of claim 1, wherein

10 with respect to an arrangement of the sync codes in the same sector, two or more sync codes are changed from a first pattern to a second pattern,

 provided that the first pattern comprises a combination of successive three said sync codes, and

15 that the second pattern is obtained by shifting the arrangement of the sync codes of said first pattern by one sync code.

3. The structure of claim 1, wherein

20 with respect to an arrangement of the sync codes in the same sector, a previous pattern comprising a combination of previous successive sync codes is provided, said previous pattern being configured to be used for detecting a frame shift in the sync frame, or for detecting an erroneous sync code detection.

25 4. The structure of claim 1, wherein

 said area being divided by the sectors includes ECC blocks each of which may serve as a unit of writing

or re-writing,

a guard area is provided between successive two of said ECC blocks formed on the information storage medium, and

5 one of said sync codes is provided at a leading portion of said guard area.

5. The information storage medium as defined in claim 1, wherein digital information is recorded in the area being divided by said sectors.

10 6. A method for recording digital information on an information storage medium having an area being divided by sectors, comprising:

providing sync frames in at least one of said sectors,

15 providing a plurality of sync codes in at least one of said sync frames,

providing ECC blocks in the area of said information storage medium, and

20 recording ECC-encoded digital information in the ECC block, using said sync frames.

7. A method for reproducing digital information from an information storage medium having an area being divided by sectors, wherein at least one of said sectors includes one or more sync frames, and at least one of said sync frames includes a plurality of sync codes, said method comprising:

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reproducing the digital information including said

sync codes, and

continuing reproduction of the digital information based on the reproduced sync codes.

8. An apparatus for reproducing digital
5 information from an information storage medium having an area being divided by sectors, wherein at least one of said sectors includes one or more sync frames, and at least one of said sync frames includes a plurality of sync codes, said apparatus comprising:

10 an information reproducer configured to reproduce the digital information recorded on said information storage medium;

a sync code position extractor configured to detect a position of the sync code from the reproduced
15 digital information; and

a circuit configured to continue the reproduction of the digital information based on the detected sync code position.